

possible that some prism grooves **12a-1** located adjacent to the light sources **13** may be formed smaller in size than those **12a-1** located distant from the light sources **13**, as shown in FIG. 6. In other words, it is possible that the farther the prism grooves are located from the light source **13**, the larger they are formed in size.

[0052] With the prism grooves **12a-1** formed of different sizes, less reflection of light may occur at the prism grooves **12a-1** having a smaller size located in a region adjacent to the light source **13**, which a relatively large amount of light reaches. On the contrary, more reflection of light may occur at the prism grooves **12a-1** having a larger size located in a region distant from the light source **13** that a relatively small amount of light reaches. Accordingly, light may be uniformly reflected by the prism grooves **12a-1** across the front of the light guide plate **12**.

[0053] FIG. 7 is a cross-sectional view of a display guide plate and a light source of a showcase, according to an exemplary embodiment. In an exemplary embodiment shown in FIG. 7, the prism grooves **12a-2** may be formed to have the same size, but the gaps between the prism grooves **12a-2** are relatively wide in the region adjacent to the light source **13** while being relatively narrow in the region distant from the light source **13**. In other words, it is possible that the quantity of prism grooves increases with the distance from the light source.

[0054] With the prism grooves **12a-2** formed at different intervals, less reflection of light may occur at the prism grooves **12a-2** in a region adjacent to the light source **13**, which a relatively large amount of light reaches. On the contrary, more reflection of light may occur at the prism grooves **12a-2** in a region distant from the light source **13**, which a relatively small amount of light reaches because the number of the prism grooves **12a-2** distant from the light source **13** is greater. Accordingly, light may be uniformly reflected by the prism grooves **12a-2** across the front of the light guide plate **12**.

[0055] FIG. 8 is a perspective view of a showcase, according to an exemplary embodiment. While the showcase includes the housing **20** to accommodate the object P in FIG. 7, it is not limited thereto and is also possible to provide a showcase to allow the object P to be rested on the top of the stand **30** without a configuration corresponding to the housing, as shown in FIG. 8.

[0056] While the showcase has the display panel **11** arranged in front of the light guide plate **12** for displaying an image in this embodiment, the showcase is not limited thereto and may be configured without the display panel, which may instead be replaced by a transparent member, such as tempered glass.

[0057] Furthermore, while there are two light sources **13** respectively arranged toward the left and the right sides of the light guide plate **12** in this embodiment, the two light sources **13** may be arranged toward the top and bottom sides of the light guide plate **12**, or there may be four light sources respectively arranged toward the four sides, i.e., the top, bottom, left, and right sides of the light guide plate.

[0058] Although the light source **13** includes the substrate **13a** and the LEDs **13b** in this embodiment, the light source **13** may employ point sources as LEDs or line sources that extend to correspond to the sides of the light guide plate.

[0059] According to aforementioned exemplary embodiments, a showcase includes a light guide plate and a light source corresponding to a side of the light guide plate. Prism

grooves are formed on the front of the light guide plate, by which most of the light entering into the light guide plate from the light source travels across a display space located behind and is reflected back in the forward direction, thereby enabling illumination of the display space with the light source used for a display panel, which eliminates a need for an additional light source to illuminate the object in the display space, and thus allows the showcase to have a thin profile.

[0060] Several embodiments have been described, but a person of ordinary skill in the art will understand and appreciate that various modifications can be made without departing the scope of the present disclosure. Thus, it will be apparent to those ordinary skilled in the art that the disclosure is not limited to the embodiments described, which have been provided only for illustrative purposes.

What is claimed is:

1. A showcase comprising:

a display module disposed in front of an object to be displayed, the display module comprising:

a light guide plate comprising a plurality of prism grooves having triangular shape disposed on a front surface of the light guide plate; and

a light source configured to emit light into the light guide plate; and

wherein a portion of light generated by the light source is reflected by the prism grooves and emitted through a rear surface of the light guide plate to illuminate the object.

2. The showcase of claim 1, wherein the display module comprises a pair of light sources corresponding to left and right sides of the light guide plate, and wherein each of the plurality of prism grooves has a form of an isosceles triangle, and two oblique sides of the isosceles triangle correspond to the left and right sides of the light guide plate.

3. The showcase of claim 2, wherein each of the plurality of prism grooves has a vertical angle ranged from 80 to 140 degrees.

4. The showcase of claim 2, wherein each of the two oblique sides of the prism groove is formed to be about 50 μ m or less long.

5. The showcase of claim 1, wherein the light source comprises a substrate extending to correspond to a side of the light guide plate; and a plurality of light emitting diodes (LEDs) arranged on the substrate.

6. The showcase of claim 1, wherein sizes of the prism grooves increase with the distance from the light source.

7. The showcase of claim 1, wherein quantity of the prism grooves increase with the distance from the light source.

8. The showcase of claim 1, further comprising: a display panel arranged in front of the light guide plate.

9. The showcase of claim 1, further comprising: a housing arranged behind the light guide plate and housing the object for display.

10. The showcase of claim 8,

wherein the display module further comprises a middle mold configured to support the display panel, a front chassis coupled onto the front side of the middle mold configured to maintain the display panel installed in the middle mold, and a rear chassis, combined onto the rear side of the middle, configured to support the light guide plate and the light source, and